

Administrative Record  
SF File Number

1040100

1188562 - R8 SDMS

Please return to EPA in 5 days  
0031835

RECEIVED  
DEC 30 1988

EPA Region VIII  
Regional Hearing Clerk

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII

IN THE MATTER OF: )

ASARCO Incorporated )  
East Helena, Montana )

RESPONDENT, )

PROCEEDING UNDER SECTIONS 104(b), )  
122(a), AND 122(d)(3) OF THE )  
COMPREHENSIVE ENVIRONMENTAL )  
RESPONSE, COMPENSATION, AND )  
LIABILITY ACT OF 1980, AS AMENDED )  
BY THE SUPERFUND AMENDMENTS AND )  
REAUTHORIZATION ACT OF 1986, )  
42 U.S.C. §§ 9604(b), 9622(a), AND )  
(d)(3) )

ADMINISTRATIVE ORDER  
ON CONSENT RE:  
REMEDIAL INVESTIGATION  
AND FEASIBILITY STUDY

Docket No. CERCLA  
VIII-89- 10

## TABLE OF CONTENTS

	<u>Page</u>
I. JURISDICTION . . . . .	2
II. NOTICE OF ACTION . . . . .	3
III. PARTIES BOUND . . . . .	4
IV. STATEMENT OF PURPOSE . . . . .	5
V. FINDINGS OF FACT . . . . .	6
VI. CONCLUSIONS OF LAW . . . . .	11
VII. DETERMINATIONS . . . . .	12
VIII. ORDER . . . . .	13
IX. ADDRESSES FOR ALL CORRESPONDENCE . . . . .	19
X. ADDITIONAL WORK . . . . .	21
XI. COMPLIANCE WITH OTHER APPLICABLE LAWS . . . . .	23
XII. ACCESS . . . . .	24
XIII. PROJECT COORDINATORS . . . . .	25
XIV. SAMPLING AND DATA/DOCUMENT AVAILABILITY . . . . .	26
XV. QUALITY ASSURANCE . . . . .	27
XVI. ADMISSIBILITY OF DATA . . . . .	28
XVII. FORCE MAJEURE . . . . .	29
XVIII. STIPULATED PENALTIES . . . . .	31
XIX. DISPUTE RESOLUTION . . . . .	33
XX. COMMUNITY RELATIONS AND PUBLIC COMMENT . . . . .	34
XXI. RECORD PRESERVATION . . . . .	35
XXII. CERCLA FUNDING . . . . .	35
XXIII. RESERVATION OF RIGHTS . . . . .	36

	<u>Page</u>
XXIV. REIMBURSEMENT OF COSTS . . . . .	42
XXV. INDEMNIFICATION OF THE UNITED STATES AND THE STATE . . . . .	47
XXVI. ADMINISTRATIVE RECORD . . . . .	47
XXVII. PUBLIC COMMENT AND EFFECTIVE DATE OF ADMINISTRATIVE ORDER . . . . .	48
XXVIII. SUBSEQUENT AMENDMENT . . . . .	50
XXIX. CONSISTENCY WITH NCP . . . . .	50
XXX. COVENANT NOT TO SUE . . . . .	50
XXXI. TERMINATION AND SATISFACTION . . . . .	51
XXXII. RELATIONSHIP OF THE PARTIES . . . . .	51

ADMINISTRATIVE ORDER ON CONSENT

Whereas, ASARCO Incorporated (the "Respondent") and the United States Environmental Protection Agency ("EPA") entered into a previous Administrative Order on Consent on August 31, 1984, Docket No. CERCLA VIII-84-006, pursuant to which remedial investigation studies have been performed by the Respondent in relation to the East Helena smelter site; and,

Whereas, the Superfund Amendments and Reauthorization Act of 1986 ("SARA") has been enacted by the U.S. Congress and has an effective date of October 17, 1986, which Act includes requirements for studies such as those being performed at the East Helena smelter site; and,

Whereas, EPA, the State of Montana (the "State"), and the Respondent agree that certain additional remedial investigation ("RI") studies and the feasibility studies ("FS") as defined in the Comprehensive Remedial Investigation/Feasibility Study Plan, September 1987 (Appendix A), are necessary for completion of the Remedial Investigation/Feasibility Study ("RI/FS");

Now therefore, EPA, the State, and the Respondent enter into this Administrative Order on Consent, hereinafter referred to as "Consent Order," which sets forth, in Appendix A, the additional work to be performed by Respondent and which incorporates the requirements of SARA.



# I. JURISDICTION

A. This Consent Order is issued pursuant to the authority vested in the President of the United States by sections 104(a) and (b) and 122(a) and (d)(3) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§9601, et seq. ("CERCLA"), as amended by SARA, Pub. L. 99-499, and delegated to the Administrator of EPA on January 29, 1987, by Executive Order 12580, 52 Federal Register 2923, and further delegated to the Assistant Administrator for Solid Waste and Emergency Response and the Regional Administrators by EPA Delegation No. 14-14-C on February 26, 1987.

B. Except as otherwise provided herein, the State is participating in this Consent Order, in a consultative capacity, pursuant to and in accordance with sections 104(c)(2), 104(d)(1), and 121(f) of CERCLA and the National Contingency Plan, 40 C.F.R. Part 300.

C. The Respondent to this Consent Order agrees to undertake all actions required by the terms and conditions of this Consent Order. The Respondent consents to the jurisdiction of the Federal District Court in any proceeding by EPA to enforce this Consent Order. The Respondent consents to the jurisdiction of the appropriate Federal or State Court in any proceeding by the State, under the appropriate Federal or State law, to enforce this Consent Order. In any such proceeding, the Respondent will not contest, for the purpose of establishing jurisdiction, any

Findings of Fact deemed necessary by the court to establish jurisdiction to enforce this Consent Order.

D. Respondent's consent to jurisdiction shall not constitute an admission of any legal or factual matter set forth in this Consent Order or in any work plan or other document prepared by Respondent or utilized by Respondent, EPA, or the State pursuant to this Consent Order, or otherwise. By signing this Consent Order, Respondent does not admit, accept, or acknowledge any liability or fault with respect to the conditions at or arising from the East Helena smelter site.

## II. NOTICE OF ACTION

A. In a section 104(e) information request, EPA has notified all potentially responsible parties which it has identified as of the date of this Consent Order about this action and has provided them with the names and addresses of other known potentially responsible parties. EPA is herein exercising its discretion to not issue section 122(e) notice letters because to do so would not facilitate agreement or expedite remedial action.

B. EPA has notified the Federal Natural Resource trustee of this action pursuant to the requirements of section 122(j) of SARA.

C. EPA has notified the State of this action pursuant to the requirements of section 121(f) of CERCLA.

III. PARTIES BOUND

A. This Consent Order applies to and binds the following persons as defined in section 101(21) of CERCLA:

- (1) EPA, through the Regional Administrator,  
Region VIII;
- (2) ASARCO Incorporated, a corporation duly organized under the laws of the State of New Jersey, herein referred to as the "Respondent," its successors and assigns and all persons acting by its authority and in its behalf including its officers, directors, principals, employees and agents, in their representative capacities and as otherwise provided by law;
- (3) And where expressly provided in this Consent Order, the State of Montana, through its Department of Health and Environmental Sciences.

B. Each undersigned representative of EPA, the State and the Respondent certifies that such person is fully authorized to enter into the terms and conditions of the Consent Order and to execute and legally bind such party to this document.

C. No change in ownership or corporate status shall in any way alter the status or responsibility of the Respondent under this Consent Order. The Respondent shall be responsible for carrying out all actions required of the Respondent by the terms and conditions of this Consent Order. The Respondent shall be responsible for ensuring that all contractors, consultants, firms

and other persons or entities acting on its behalf, with respect to matters included herein, will comply with the terms of this Consent Order.

#### IV. STATEMENT OF PURPOSE

A. In entering this Consent Order, the Respondent, EPA, and the State agree that the Respondent will: (1) continue the remedial investigation studies already initiated pursuant to Administrative Order on Consent, Docket No. CERCLA VIII-84-006, as well as the remedial investigation studies covered by this Consent Order, and (2) as provided in Article X, perform additional remedial investigations deemed necessary to determine fully the nature and extent of the release or threatened release of hazardous substances, pollutants, or contaminants from the East Helena smelter site and a feasibility study to identify and evaluate alternatives for the appropriate extent of remedial action to prevent or mitigate the migration or the release or threatened release of hazardous substances, pollutants, or contaminants at or from the East Helena smelter site.

B. On the effective date of this Consent Order pursuant to section XXVII of this Consent Order, Administrative Order on Consent, Docket No. 84-006, will terminate by mutual agreement of EPA and the Respondent. EPA has determined that the 1984 Consent Order should be terminated and replaced by this Consent Order because it does not reflect the requirements of SARA.

C. RI studies that were initiated prior to the effective date of SARA are identified in Appendix B (Part I) and will be referred to as "Ongoing RI Activities." These activities were performed in accordance with the terms and provisions of Administrative Order on Consent, Docket No. CERCLA VIII-84-006.

D. Studies initiated after the effective date of SARA as well as all reports filed with respect to all studies initiated prior to or after that date will be referred to as "Remaining RI/FS Activities." These activities are summarized in Appendix B (Part II) and are to be performed in accordance with the terms and provisions of this Consent Order.

E. The parties agree that considerable work has already been performed under the Administrative Order on Consent, Docket No. CERCLA VIII-84-006 (effective date of August 31, 1984) and agree that all such work shall be utilized to the maximum extent appropriate in the RI/FS for the East Helena smelter site.

F. All activities conducted pursuant to this Consent Order are subject to approval by EPA, after consultation with the State, shall employ sound scientific, engineering, and construction practices, and if conducted in accordance therewith, shall be deemed not inconsistent with the NCP, 40 C.F.R. section 300.68.(a) and (j) as amended, and SARA.

#### V. FINDINGS OF FACT

Based upon information available on the effective date of this Consent Order, the Region VIII Regional Administrator of EPA, with the concurrence of the State, makes the following

findings. The Respondent does not concur with, or admit to the truth, accuracy or completeness of, and specifically denies all of the following findings, except the findings in paragraphs A, B, J, and L below, which it believes to be correct.

A. The Asarco smelter at East Helena, Montana, is a primary custom lead smelter located in Section 36, Township 10 North, Range 3 West, at 46° 34' 51" North latitude and 111° 55' 13" West longitude, in the town of East Helena, in Lewis and Clark County, Montana. The town of East Helena and the Asarco smelter are approximately four miles east of Helena, Montana, in a gently sloping portion of the Helena valley, at an elevation of about 3900 feet above mean sea level. A smelter has been in operation at this site since 1888.

B. The Respondent purchased the smelter from the Helena and Livingston Lead Smelting Company in 1899 and has since owned and operated the smelter. Additionally, in 1972, the Respondent purchased from the Anaconda Company, Inc., a zinc plant, which was located adjacent to the East Helena smelter site and which recovered zinc by a fuming process from 1927 to 1982.

C. The East Helena smelter has emitted particles containing heavy metals into the air during its 100 years of operation. Investigations conducted at the site revealed higher than background levels of hazardous substances such as lead, cadmium, arsenic, and other elements in the soils, vegetation, livestock, surface water, and groundwater at certain points located within the area around the smelter. EPA and the State

are concerned that contaminated soil particles inhaled or ingested by children may be harmful to their health. An additional concern is that runoff from soils laden with metals or runoff from materials stored at the East Helena smelter site may contaminate the ground or surface water. A study of the area's ground water, which was conducted by the U.S. Geological Survey, concluded in 1983 that in general the ground and surface water are connected.

D. The hazardous substances present at the East Helena smelter site, including arsenic, lead, cadmium, and zinc, are continuing to be emitted, leaked, leached, or discharged into the environment, including waters of the United States and waters of the State of Montana.

E. Many residents of East Helena and the rural areas adjacent to the smelter raise garden vegetables and fruits, hay and grain crops, and livestock. Elevated levels of lead, cadmium, arsenic, and other elements found in the area's soils have been shown to be present also at elevated levels in the fruits, vegetables, crops, and livestock. This may endanger the health of those people who consume them. There is also concern over a possible relationship between livestock deaths and elevated metal levels for lead and arsenic in the soils and feed crops.

F. A 1975 study of approximately 100 East Helena children, which was conducted by the National Centers for Disease Control, revealed four children with lead/blood ratios in excess of

40 micrograms/deciliter (40 ug/dL) and twenty other children with lead/blood ratios in excess of 30 ug/dL. The Centers for Disease Control had previously established that children exhibiting a lead/blood ratio in excess of 30 ug/dL should be treated for lead poisoning. In 1983, a similar study of approximately 400 East Helena children was again conducted by the National Centers for Disease Control. One child was found to have a lead/blood ratio in excess of 25 ug/dL.

G. Preliminary remedial investigations conducted from 1984 through 1987 by EPA, pursuant to the Administrative Order on Consent between the parties, dated August 31, 1984, which were designed to determine fully the nature and extent of the public health, or welfare or environmental effects, if any, of any release of hazardous substances, pollutants and contaminants from the East Helena smelter site, resulted in the following findings:

1. The elements silver, arsenic, cadmium, copper, mercury, manganese, lead, selenium, thallium and zinc are enriched compared to background levels in the valley's soils;
2. The elements arsenic, cadmium, copper, mercury, lead, and in some cases zinc, are enriched compared to background levels in the principal crops grown in the valley;
3. The element lead was significantly elevated in the blood of all eight cattle herds tested in the valley and the elements arsenic, cadmium, and zinc



were significantly elevated in, respectively, six, two, and four of the eight herds tested, as compared to a control herd, and

4. The maximum concentrations of those elements enriched in the three media investigated are found immediately adjacent to the East Helena smelter site.

H. Lead exposure can cause a decrease in the concentration of blood proteins, such as hemoglobin, which transports oxygen throughout the body, and can impair the utilization of iron. Such exposure can also produce neurobiological defects, such as learning disabilities and behavioral problems in children.

I. Arsenic exposure has been linked to increased incidence of human lung and skin cancer. Cadmium has been demonstrated to cause cancer in animals, and is a suspected human carcinogen. Cadmium may also be a human mutagen or teratogen and thus may affect the kidneys, bones, liver, reproductive system, respiratory tract or immune system. Cadmium inhibits the body's ability to absorb essential elements, such as copper and calcium, and may lead to deficiencies of those elements.

J. Arsenic, cadmium, copper, mercury, manganese, lead, selenium, silver, thallium and zinc are defined as hazardous substances by section 101(14)(D) of CERCLA.

K. EPA and the State have determined that hazardous substances, as defined above, have been and continue to be released, and threaten to continue to be released into the

air, soil, surface water, and groundwater at the site and surrounding area by particulate emissions from the East Helena smelter. Contaminated soils may be re-entrained into the air as inhalable particles or directly or indirectly ingested.

L. EPA has conducted, and the Respondent is currently conducting, various studies which are part of a Remedial Investigation of the soils, plants, livestock, and water resources within the Helena valley.

M. EPA proposed to add the East Helena smelter site to the National Priorities List (NPL) of uncontrolled hazardous waste sites in September 1983. In September 1984, the East Helena smelter site was officially listed on the NPL. In accordance with section 105 of CERCLA, the NCP serves as guidance to investigation and possible response actions. Any investigation or response action proposed at an NPL site shall conform to the requirements of the NCP and SARA.

#### VI. CONCLUSIONS OF LAW

Based upon information available on the effective date of this Consent Order, the Regional Administrator of EPA, Region VIII, with the concurrence of the State, makes the following conclusions of law. The Respondent does not concur with, or admit to the truth, accuracy or completeness of any of the following conclusions.

A. The East Helena smelter site is a "facility" as defined in section 101(9) of CERCLA.

B. Arsenic, cadmium, copper, mercury, manganese, lead, selenium, silver, thallium, and zinc, which EPA and the State have determined to be present at the site, are defined as "hazardous substances" by section 101(14) of CERCLA.

C. EPA and the State have determined that the past, present, and potential future migration of the "hazardous substances" set forth in paragraph B above, at the site, constitute an actual and/or threatened "release" as defined in section 101(22) of CERCLA.

D. The Respondent is a "person" as defined in section 101(21) of CERCLA.

E. The Respondent is a liable person pursuant to section 107 of CERCLA for the reasons set forth in Article V of this Consent Order.

#### VII. DETERMINATIONS

Based on the foregoing Findings of Fact and Conclusions of Law, the Regional Administrator of EPA, Region VIII, after consultation with the State, has determined that:

A. The Respondent is qualified to perform the RI/FS and will promptly and properly complete an RI and conduct an FS at the East Helena smelter site.

B. The actions required by this Consent Order are in the public interest and are not inconsistent with the NCP, as amended, or SARA.

VIII. ORDER

A. The Respondent agrees to undertake the following actions. All work to be performed by the Respondent pursuant to this Consent Order shall be under the direction and supervision of a professional engineer or qualified scientist.

After the effective date hereof and prior to the initiation of work at the East Helena smelter site pursuant to this Consent Order, the Respondent shall notify EPA and the State in writing of the name, title, and qualifications of the proposed engineer or scientist, and of the names of principal contractors proposed to be used in carrying out the work to be performed pursuant to this Consent Order. Selection of any such engineer, scientist, or contractor shall be subject to approval by EPA, after consultation with the State. Engineers, scientists, or contractors who are currently performing work or have performed work previously are hereby deemed approved for purposes of the activities they have or are currently conducting. Those firms are Hydrometrics, Inc., Hunter/ESE Environmental Services, Inc., MSI Detoxification, Inc., Roy F. Weston, Inc., and Western Technology & Engineering, Inc.

B. Remaining RI/FS Activities, specified in Appendix A and summarized in Appendix B (Part II), are incorporated herein and made an enforceable part of this Consent Order. The Respondent shall perform the studies specified in the Work Plan (Appendix A) in accordance with the schedules contained in Appendix C.

C. Any modification or addendum to approved Quality Assurance Plans or Field Operations Plans which may be deemed necessary in order to fully define the nature and extent of the contamination at the East Helena smelter site shall be prepared by Respondent and must receive EPA approval, after consultation with the State. These plans shall be incorporated herein and made enforceable parts of this Order.

D. The Respondent agrees to and shall continue to implement the work specified in Appendix A, the Comprehensive Remedial Investigation/Feasibility Study Plan, and approved revisions and addenda, according to the schedules provided in Appendix C. All work shall be conducted in accordance with the current National Contingency Plan and the requirements of this Consent Order. All work shall be conducted in accordance with the current EPA Guidance on Remedial Investigations and Feasibility Studies, with due consideration given to the status of the work at the time any new Guidance documents are issued.

E. The Respondent shall submit to EPA and the State for review the preliminary and final Endangerment Assessment reports, the preliminary and final Remedial Investigation/Feasibility Study reports, and any other preliminary or final plans or reports specified in Appendix A. After comment by the State and upon approval by EPA, these work products will be incorporated into this Order by reference.

F. EPA and the State have provided Respondent with an initial identification of potential location-specific and contaminant-specific "applicable or relevant and appropriate requirements" ("ARARs") for the East Helena smelter site.

Respondent has reviewed the ARARs and has conducted analyses, which will result in the identification of all ARARs, including location-specific, contaminant-specific, and action-specific ARARs, in two parts as follows:

- a) the preliminary site-wide ARARs analysis is provided in the Comprehensive Preliminary Feasibility Study Report (April 1988); and
- b) the preliminary ARARs analysis for the process ponds will be provided in the draft Feasibility Study report for that operable unit.

EPA and the State will provide Respondent with comments and necessary revisions to the preliminary site-wide ARARs analysis and the preliminary ARARs analysis for the process ponds within thirty (30) working days of receipt of the draft Feasibility Study report for the process ponds operable unit.

In the event that EPA does not approve a State ARAR which the State asserts is a valid State standard, requirement, criteria or limitation, the State may request within thirty (30) working days following submittal of the State's comments that the Respondent gather information or otherwise comply with the

standard, requirement, criteria or limitation independently of the activities required pursuant to this Consent Order. The Respondent shall respond to the State's request within ten (10) working days of receipt of the request and shall either agree to comply with such a State standard, requirement, criteria, or limitation or shall refuse to comply and enclose its rationale for such refusal. A copy of this response shall be sent to EPA. If the State does not accept the Respondent's rationale, the State will so notify Respondent within a reasonable time of receipt of Respondent's rationale and schedule a meeting with the Respondent to discuss the Respondent's position and rationale. If the Respondent is not satisfied with the results of the meeting, the Respondent can forward a copy of its position and rationale to the Director of the Department of Health and Environmental Sciences (DHES) and request a meeting with the Director. The Director will arrange a meeting with the Respondent and appropriate DHES staff. After consideration of the presentations made by all parties, the Director shall render a final decision. If the Respondent does not comply with such final decision, the State reserves any rights it may have to either compel the Respondent to undertake the investigation or undertake the investigation itself and recover all costs incurred.

G. The State shall transmit comments, if any, on all documents it reviews to EPA. If any disagreement results, the State will transmit any comments that EPA does not agree with

directly to the Respondent, with a copy to EPA. The Respondent shall respond to comments it receives directly from the State within twenty (20) working days from receipt, by sending a written response to the State, with a copy to EPA, independent of the RI/FS activities. Notwithstanding the foregoing provision, the Respondent shall not revise the RI/FS in response to State comments unless permitted to do so by EPA.

H. If EPA, after consultation with the State, disapproves the preliminary, the revised, or the final plan or report, any deficiency or required modification, as well as a statement of the reasons for such deficiency or modification, shall be specified in writing and sent to Respondent and the State. Respondent shall submit a revised plan or report addressing those deficiencies or incorporating those required modifications to EPA and the State, as soon as possible, not to exceed thirty (30) working days from the Respondent's receipt of EPA written comments, or such longer periods as the EPA Project Coordinator may reasonably establish, after consultation with the State. EPA, after consultation with the State, shall approve or disapprove the final plan or report within ten (10) working days after receipt. If Respondent fails to implement EPA's revisions, EPA reserves the right to make such revisions itself. This paragraph shall not be deemed to excuse Respondent from stipulated penalties for failure to submit properly prepared plans and reports in accordance with the schedule in Appendix C.



I. In the event of final disapproval of any revised plan or report, EPA, in consultation with the State, retains the right to perform additional studies, which EPA deems necessary for final site characterization.

J. In the event that subsequent amendments to the NCP are promulgated after the effective date of this Consent Order which materially affect the rights or obligations of either party with respect to the substantive nature of the work to be performed in the RI/FS, EPA, the State and the Respondent agree to negotiate in good faith an amendment to this Consent Order to provide for such changes.

K. The Respondent shall provide bimonthly written progress reports to EPA and the State according to the schedule contained in Appendix C. At a minimum, these bimonthly written progress reports shall include the following:

1. A description of the action which has been taken toward achieving compliance with this Consent Order;
2. Unless previously submitted, all results of sampling and tests (i.e. raw or validated data) produced during the reporting period relating to the East Helena smelter site;
3. A description of all plans and procedures completed during the past reporting period, as well as a list of such actions, data, and plans which are scheduled for the next reporting period; and

4. Target and actual completion dates for each element of activity, including the project completion, and an explanation of any deviation from the schedules in Appendix C.

L. The bimonthly written progress reports shall continue to be submitted to EPA and the State by the tenth working day of each alternate month until the date of completion of the work detailed in Appendix A.

IX. ADDRESSES FOR ALL CORRESPONDENCE

Notices, documents, reports, approvals, disapprovals, and other correspondence submitted with respect to this Consent Order shall be sent by certified mail or hand delivered to the addressee and shall be deemed to be delivered upon receipt, if hand delivered, or on the date of the postmark, if mailed. Official notices need only be given to the Project Coordinators; however, the notices shall be sent to all of the following addresses, or to such other addresses as the Respondent, the State, or EPA may hereafter designate in writing:

A. Documents to be submitted to EPA should be sent or hand delivered to:

D. Scott Brown  
Remedial Project Manager  
U.S. Environmental Protection Agency  
Montana Operations Office  
301 S. Park, Drawer 10096  
Helena, Montana 59626-0096  
(406) 449-5414

and

Sandra R. Moreno, Esq.  
Office of Regional Counsel  
U.S. Environmental Protection Agency  
Region VIII  
999 18th Street, Suite 500  
Denver, Colorado 80202-2405  
(303) 294-7587

B. Documents to be submitted to the Respondent should be sent or hand delivered to:

Jon C. Nickel  
Industrial Quality Manager  
ASARCO Incorporated  
Box 1230  
East Helena, Montana 59635  
(406) 227-7160

and

Cynthia S. Leap, Esq.  
Holland & Hart  
P.O. Box 8749  
Denver, Colorado 80201  
(303) 295-8342

C. Documents to be submitted to the State should be sent or hand delivered to:

Duane Robertson  
Solid and Hazardous Waste Bureau  
Montana Department of Health  
and Environmental Sciences  
Cogswell Building, Room B201  
Helena, Montana 59620  
(406) 444-2821  
Attn: Doug Rogness

and

Thomas L. Eggert, Esq.  
Montana Department of Health  
and Environmental Sciences  
C-216 Legal Division  
Cogswell Building  
Helena, Montana 59620  
(406) 444-2821

X. ADDITIONAL WORK

A. In the event that EPA, in consultation with the State, or the Respondent determines that additional work, including remedial investigatory work or an engineering evaluation, is necessary to accomplish the objectives of the RI/FS, notification of such additional work shall be provided to each of the other parties.

B. Any additional work determined to be necessary by the Respondent shall be subject to approval by EPA, in consultation with the State.

C. If EPA, in consultation with the State, determines that work in addition to that set forth in the Appendix A is necessary to complete the RI/FS, EPA shall provide an opportunity for the Respondent to perform the additional work by providing the Respondent with a written description of such additional work and the basis for its need to fulfill the requirements of the RI/FS. Within ten (10) working days, if the amount of the additional work is \$5,000 or less, or within thirty (30) working days if the amount of the additional work exceeds \$5,000, the Respondent shall notify EPA and the State of its decision to undertake such additional work or of its refusal to do so. The Respondent shall have no obligation to perform any such work, and any refusal by the Respondent to undertake such additional work shall not constitute a violation of this Consent Order. Any additional work agreed to by the Respondent under this article shall be performed in a manner consistent with this Consent Order

and shall be incorporated into this Consent Order by addenda to Appendix A and Appendix C.

D. If the State determines that work in addition to that set forth in Appendix A should be performed, it shall provide comments to the Respondent in writing, with a copy to EPA, which shall specifically describe the additional work and the basis for its need. Such comments must be provided prior to the final approval of the RI/FS by EPA, and if no such comment is given, the State will not request any additional or independent work. In the event comment by the State is timely made, the Respondent shall respond to the State in writing within twenty (20) working days of the receipt of the comments from the State. In such response the Respondent shall either agree to perform the additional work or refuse to do so with an explanation for such refusal, and Respondent shall send a copy of its response to EPA. In the event the Respondent agrees to perform the additional work requested by the State, the performance of such additional work by Respondent shall utilize sound scientific, engineering, and construction practices. If the Respondent does not agree to perform the additional work requested by the State, the State shall schedule a meeting with Respondent to discuss Respondent's comments. If Respondent is not satisfied with the results of the meeting, Respondent can forward a copy of its comments to the Director of the Department of Health and Environmental Services (DHES) and request a meeting with the Director. The Director will arrange a meeting with the Respondent and appropriate DHES

staff. After consideration of the presentations made by all parties, the Director shall render a decision. The Respondent shall have no obligation to perform any such work pursuant to this Consent Order.

XI. COMPLIANCE WITH OTHER APPLICABLE LAWS

To the extent required by SARA, all work undertaken by the Respondent pursuant to this Consent Order shall be performed in compliance with all applicable Federal and State laws and regulations, including all Occupational Health and Safety Administration and Department of Transportation regulations unless an exemption from such requirements is provided by the appropriate laws or regulations.

The Respondent shall be responsible for obtaining all Federal, State, or local permits or approvals which are necessary for the performance of any work hereunder. So long as timely and complete application has been made, failure or delay of any local government, the State, or EPA to issue any necessary permit or approval in a timely fashion shall relieve the Respondent of its obligations to initiate or complete any actions otherwise required by this Consent Order which cannot reasonably be initiated or completed without that permit or approval, until such permits or approvals are obtained. The Respondent shall notify EPA and the State promptly of its inability to obtain such permit or approval.

## XII. ACCESS

A. To the extent that the East Helena smelter site or other areas where work is to be performed hereunder is presently owned by parties other than the Respondent, the Respondent shall use its best efforts to obtain access agreements from the present owners as much in advance of the date work is to be performed as is necessary and reasonable. Such agreements shall attempt to provide access for EPA and the State as specified below. In the event that such access agreements are not obtained, the Respondent shall so notify EPA and the State. EPA, after consultation with the State, will then use its best efforts to assist in obtaining any necessary access. The parties agree that this Consent Order may be modified if the Respondent's inability to gain access materially impedes the completion of an activity pursuant to this Consent Order.

B. In relation to the work performed pursuant to this Consent Order, representatives of EPA and the State shall be allowed access to the site and to other areas by the Respondent, and as an express part of any agreement obtained pursuant to paragraph A above, such access shall be provided for. The access and information gathering activities provided for in this Consent Order shall be governed by and shall be conducted pursuant to and in accordance with the terms and provisions of section 104(e) of CERCLA.

C. Nothing herein shall be construed as restricting the inspection or access authority of EPA or the State under any law or regulation.

XIII. PROJECT COORDINATORS

A. The following Project Coordinators shall be responsible for overseeing the implementation of this Consent Order. The EPA Project Coordinator for the East Helena smelter site is D. Scott Brown. The State's Project Coordinator is Doug Rogness. Respondent's Project Coordinator is Jon C. Nickel. To the maximum extent possible, communications among the Respondent, the State, and EPA, and all documents, reports, approvals and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Order, shall be directed through the Project Coordinators. During implementation of the RI/FS, the Project Coordinators shall, whenever possible, attempt in good faith to resolve disputes informally through discussion of the issues.

B. EPA, the State, and the Respondent shall each have the right to change their respective Project Coordinators. Such a change shall become effective ten (10) working days after written notice is given to the other parties.

C. The EPA Project Coordinator shall have the authority vested in an On-Scene Coordinator or a Remedial Project Manager by the NCP, as amended, including the authority to halt, conduct, or direct any work required by this Consent Order, or to direct any response action undertaken by EPA, in consultation with the State, when conditions at the East Helena smelter site may present an imminent and substantial endangerment to the public health or welfare or the environment. In the event that the EPA



Project Coordinator, after consultation with the State, halts work pursuant to this paragraph, the Respondent may request a modification of the schedule or work described in either Appendix A or Appendix C and this Consent Order. The extent of EPA's consultation with the State, as mentioned in this provision, will be dictated by the urgency of the situation.

D. The absence of the EPA Project Coordinator and/or the State Project Coordinator from the Facility shall not be cause for stoppage of work.

E. The Project Coordinator for the Respondent, or his designated representative, shall be on-site during all hours of site work or shall be on call during the entire pendency of this Consent Order.

#### XIV. SAMPLING AND DATA/DOCUMENT AVAILABILITY

A. The Respondent shall make the results of all sampling, tests or other data generated by the Respondent or on behalf of the Respondent, pursuant to implementation of this Consent Order, available to EPA and the State, and shall submit these results, including raw data, within ten (10) working days of receipt by the Respondent, or earlier, if possible.

B. At the request of EPA or the State, the Respondent shall provide to the requesting party splits or duplicates of any samples collected by the Respondent pursuant to the implementation of this Consent Order, provided that sufficient sample volume is available to adequately split samples. The Respondent shall notify EPA and the State at least five (5)

calendar days in advance of any sample collection or field activity for which sampling times can be determined in advance. If five (5) calendar days' advance notice cannot be provided, Respondent will notify EPA and the State as soon as possible prior to the sampling.

C. Pursuant to applicable Federal laws and regulations, the Respondent may assert a confidentiality claim with respect to any or all of the information requested or submitted pursuant to the terms of this Consent Order. Such an assertion must be adequately substantiated when the assertion is made. Data that has been subjected to the quality assurance validation procedure and other information described in section 104(e)(7)(F) of CERCLA shall not be claimed as confidential by the Respondent so long as its release conforms to the requirements of the procedures set out in Article XX. Information determined to be confidential by EPA in accordance with applicable Federal laws and regulations will be afforded the full protection provided by such laws and regulations. The State will maintain confidential documents pursuant to applicable State laws and regulations.

#### XV. QUALITY ASSURANCE

A. The Respondent shall continue to use quality assurance, quality control, and chain of custody procedures during all data collection activities in accordance with EPA "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans" QAMS-005-80 (EPA, 1980) and will comply with amendments to such guidelines upon notification to the Respondent of such amendments by EPA.

B. The Respondent shall consult with the EPA Project Coordinator in planning for, and prior to, all sampling and analysis as detailed in Appendix A. In order to provide quality assurance and maintain quality control with respect to all samples collected pursuant to this Consent Order, the Respondent shall:

1. Ensure that EPA and the State or their authorized representatives are allowed access to any laboratories and personnel utilized by the Respondent for analyses;
2. Ensure that all sampling and analyses are performed according to EPA methods or other methods deemed satisfactory by EPA; and
3. Ensure that any laboratories utilized by the Respondent for analyses participate in an EPA quality assurance/quality control program equivalent to that which is followed by EPA, and which is consistent with EPA document QAMS-005-80 and subsequent amendments. As part of such a program and upon request by EPA, such laboratories shall perform analyses of samples provided by EPA to demonstrate the quality of analytical data for each such laboratory.

#### XVI. ADMISSIBILITY OF DATA

A. Except as provided herein, EPA, the State, and the Respondent hereby waive any evidentiary or other objection, in

any proceeding brought with respect to this Consent Order as to the authenticity and admissibility of any final data generated or evaluated by EPA, the State, or the Respondent in the oversight or performance of the requirements of this Consent Order or CERCLA Administrative Order on Consent Docket No.

CERCLA VIII-84-06. For purposes of this section, the term "final data generated, or evaluated" shall be interpreted to mean only analytical data that has been verified and approved by EPA, after consultation with the State, as being in full compliance with the quality assurance/quality control ("QA/QC") requirements in effect at the time the samples were collected after an evaluation conducted pursuant to the QA/QC data validation procedures required by this Consent Order and Appendix A.

B. For purposes of this section, the phrase "evidentiary objections to authenticity" includes, without limitation, objection based on the failure to offer testimony or evidence concerning collection and sampling procedures, chemical or physical analyses, chain of custody, field and laboratory QA/QC procedures, and objection based on the failure to offer any sponsoring witnesses, including samplers, chemists, and their assistants, and other persons in the chain of custody.

#### XVII. FORCE MAJEURE

A. The Respondent shall cause all work to be performed within the time limits set forth herein, unless performance is delayed by events which constitute a force majeure. For purposes of this Consent Order, a "force majeure" is any event beyond the

control of the Respondent which could not have been overcome by due diligence and which delays performance of any obligations required by this Consent Order. A force majeure event may include, by way of example but not of limitation: an Act of God; act of war; fire; revolution; riots; floods; natural disasters; adverse weather conditions; labor disturbances including strikes; any modification, cessation, or delay of the work caused by State, Federal, or local governments; any delay caused from the public review and comment process as provided in Article XXVII of this Consent Order; any delay caused by changes in the requirements of this Consent Order due to revisions or amendments to EPA guidance or the NCP; the inability to obtain or timely obtain access to property not owned or controlled by Respondent; or any act or omission of any non-party to this Consent Decree over whom Respondent has no control. Force majeure shall not normally include increased costs of performance, changed economic circumstances, normal climatic or precipitation events, failure of a Contractor to perform Respondents' obligations under this Consent Order or failure of Respondent to make timely application for any required approvals or permits.

B. The Respondent shall notify EPA and the State in writing no later than three (3) working days after any event which the Respondent contends is a force majeure. Such notification shall describe the anticipated length of the delay, the cause or causes of the delay, the measures taken and to be taken by the Respondent to minimize the delay, and the timetable

by which these measures will be implemented. The Respondent shall have the burden of demonstrating that the event is a force majeure.

C. If EPA, in consultation with the State, agrees that a delay is attributable to a force majeure, the time period for performance under this Consent Order shall be extended for the time period attributable to the event constituting the force majeure. If EPA, after consultation with the State, finds that the delay is not attributable to a force majeure, no additional time for performance under this Consent Order shall be allowed, and any dispute shall be subject to the dispute resolution provisions in Article XIX of this Consent Order. In the event further work depends on the performance of work delayed by the force majeure event, the time for performance of the further work shall be extended for a period equal to that of the delay caused by the force majeure.

#### XVIII. STIPULATED PENALTIES

A. The Respondent shall be liable for payment into the Hazardous Substances Response Trust Fund, which is administered by EPA, the sums set forth below as stipulated penalties for each day that the Respondent fails to submit any required validated field sampling data, any required bimonthly report, any preliminary or Final Endangerment Assessment report, any preliminary or final RI/FS report, or any other deliverable required by this Consent Order, as specified in Appendix C, unless EPA, in consultation with the State, determines that such

delay is attributable to a force majeure as defined in Article XVII, to a pending dispute resolution as defined in Article XIX or to a delay by EPA or the State or other governmental entity in providing necessary approvals. Such sums shall be due and payable within thirty (30) calendar days of receipt of notification from EPA assessing the penalties. These stipulated penalties shall accrue in the amount of \$1000.00 for each day following the third calendar day that the Respondent fails to comply with the schedule set in accordance with the requirements contained within this Consent Order. If such delay extends beyond ten (10) calendar days, then these stipulated penalties shall accrue in the amount of \$2000.00 for each additional calendar day that the Respondent fails to comply with the schedule.

B. The provision of stipulated penalties set forth in paragraph A of this section shall not preclude EPA or the State from electing to pursue any other remedy or sanction because of the Respondent's failure to comply with any of the terms of this Consent Order, including a suit to enforce the terms of this Consent Order. Said stipulated penalties shall not preclude EPA or the State, acting under appropriate State or Federal law, from seeking, in the alternative, statutory penalties up to the amount authorized by law in the event of the Respondent's failure to comply with any requirements of this Consent Order.

XIX. DISPUTE RESOLUTION

A. EPA, the State, and the Respondent shall use their best efforts to in good faith resolve all disputes or differences of opinion informally. If, however, disputes arise concerning the Consent Order which the parties are unable to resolve informally, the Respondent shall present a written notice of such dispute to EPA and the State, which shall set forth specific points of dispute, the position of the Respondent and the technical basis therefor, and any actions which the Respondent considers necessary.

B. Within ten (10) working days of receipt of such a written notice, EPA, after consultation with the State, shall provide a written response to the Respondent and the State setting forth its position and the basis therefor. During the five (5) working days following receipt of the response, EPA, in consultation with the State, and the Respondent shall attempt to negotiate in good faith a resolution of their differences.

C. Following the expiration of the time periods described in Paragraph B above, if EPA, in consultation with the State, concurs with the position of the Respondent, the Respondent shall be so notified in writing and this Consent Order shall be modified to include any necessary extensions of time or variances of work. If EPA, in consultation with the State, does not concur with the position of the Respondent, the written notice submitted by the Respondent and the written response prepared by EPA shall be submitted to the EPA Region VIII, Director of the Hazardous Waste



0001071

Management Division, for resolution. The Director shall render a final written decision which shall be legally supportable, taking all circumstances and relevant factors into consideration, and which shall be rendered within five (5) working days from the date of submission of the written response and notice. In the Director's absence, the Region VIII Regional Administrator may designate a representative to render a final decision or the parties may agree to extend the deadline for rendering the final decision.

D. During the pendency of dispute resolution, EPA, after consultation with the State, may extend any time period not to exceed the actual time taken to resolve the dispute. Elements of work or obligations not affected by the dispute shall be completed in accordance with the schedule contained in Appendix C.

E. Upon resolution of any dispute, whether informally or using the procedures in this Article, any addition or modification required as a result of such dispute resolution shall immediately be incorporated, if necessary, into this Consent Order. The Respondent shall proceed with all remaining work according to the modified plan or procedure.

#### XX. COMMUNITY RELATIONS AND PUBLIC COMMENT

The Respondent shall cooperate with EPA and the State in providing to the public final data, reports, or other information related to the RI/FS. The Respondent shall be consulted during the preparation and review of all appropriate information prior to its dissemination to the public unless

Respondent's Project Coordinator is unavailable and EPA determines that immediate release to the public is required in order to protect human health. In the event of such an emergency, Respondent and the State shall be consulted as soon as possible. The Respondent shall be provided with the opportunity to participate in public meetings which may be held or sponsored by EPA or the State and to explain activities at or concerning the East Helena smelter site, including the findings of the RI/FS.

#### XXI. RECORD PRESERVATION

The Respondent agrees to preserve, during the pendency of this Consent Order, and for a minimum of six (6) years after termination of this Consent Order, all records and documents in the possession of the Respondent or in the possession of any division, employees, agents, accountants, contractors, or attorneys of the Respondent, which relate to the work performed pursuant to this Consent Order. Upon request of EPA or the State, the Respondent shall make available to the requesting party any such records, or copies of any such records, excluding attorney-client privileged records and subject to Paragraph C of Article XIV of this Consent Order.

#### XXII. CERCLA FUNDING

A. The Respondent waives all claims or demands for compensation or payment under sections 111 and 112 of CERCLA against the United States or the Hazardous Substance Response

Trust Fund established by section 221 of CERCLA for costs arising out of any activity performed or expenses incurred pursuant to this Consent Order.

B. This Consent Order does not constitute any decision on preauthorization of funds under section 111(a)(2) of CERCLA.

C. In entering into this Consent Order, the Respondent waives its right to seek reimbursement under section 106(b)(2) of CERCLA for any past costs incurred under Administrative Order on Consent, Docket No. CERCLA VIII-84-006, and costs incurred in complying with this Consent Order.

#### XXIII. RESERVATION OF RIGHTS

A. EPA, the State, and the Respondent reserve all rights and defenses not specifically waived in this Consent Order.

B. Subject to the provisions of this Consent Order, EPA and the State do not waive any of their rights to enforce this Consent Order, to conduct other investigations and activities at the East Helena smelter site, or to take any other actions authorized by law. EPA reserves its rights (1) to act pursuant to sections 104, 106(a), and 107 of CERCLA; (2) to take any enforcement action pursuant to CERCLA or any available legal authority including the right to seek injunctive relief, monetary penalties, and punitive damages; (3) to undertake any RI/FS work, or any removal, remedial or response actions relating to the site pursuant to Articles VIII(H) and X of this Consent Order; and (4) to seek recovery from the Respondent for any costs incurred in undertaking such actions.

C. Subject to the provisions of this Consent Order, the State may enforce this Consent Order pursuant to applicable Federal or State law. In addition, the State may enforce any Federal or State standard, requirement, criteria, or limitation to which the remedial action is required to conform under CERCLA in the United States District Court for the district in which the facility is located, as provided in subsection 121(e)(2) of CERCLA.

D. Subject to the provisions of this Consent Order, the State reserves all of its rights to act under section 107 of CERCLA or pursuant to State law regarding the East Helena smelter site, provided, however, upon payment of past State response costs pursuant to Article XXIV the State may not seek to recover for any other costs incurred that are related to the East Helena smelter site prior to the effective date of this Consent Order. This subsection may not be used to excuse any liability that Respondent may have for damages for injury to, destruction of, or loss of any natural resources that have occurred at the site or in the surrounding area. The State retains all rights against parties not privy to this Consent Order which may arise out of the facts on which this Consent Order is based. Also subject to the provisions of this Consent Order, the State also reserves its right to undertake any remedial investigation/feasibility study work or any remedial or response actions relating to the site.

E. Subject to the provisions of Article XVII and Article XXX of this Consent Order and with the exception of

claims for costs reimbursed by the Respondent to the State, pursuant to Article XXIV of this Consent Order, the Respondent and EPA agree that the State, by signing this Consent Order or by any act or failure to act in any way related to this Consent Order, including the negotiation, preparation, execution, implementation, or enforcement of this Consent Order or any of its terms and conditions, does not release and expressly reserves any and all common law and Federal and State statutory claims, including claims pursuant to CERCLA, that have arisen or may arise against the Respondent, including any and all claims pertaining to the East Helena smelter site, for any and all available legal and equitable relief. However, the State does not reserve its rights under common law or Federal or State statutes to bring an action to compel the performance of any element of work for which the State failed to provide comments to the Respondent or to which the State assented after commenting upon pursuant to this Consent Order. The State does not waive any rights to compel the Respondent to undertake investigations on issues not addressed by this Consent Order or on environmental problems based on new data or changed conditions discovered after comments were due on a particular element of work. The State specifically reserves its rights to compel Respondent to undertake all natural resource damage assessment activities unless they are included as an element of the work described above.

F. Nothing herein is intended to release, discharge, or in any way affect any claim, cause of action or demand in law or equity which the parties may have against any person, firm, partnership or corporation not a party to this Consent Order for any liability it may have arising out of, or relating in any way to, the generation, storage, treatment, handling, transportation, release or disposal of any materials, hazardous substances, hazardous wastes, contaminants, or pollutants at, to, or from the East Helena smelter site. The signatories of this Consent Order expressly reserve all rights, claims, demands, and causes of action they have against any and all other persons and entities who are not parties to this Consent Order, and as to each other for matters not covered hereby.

G. EPA and the State recognize that the Respondent may have the right to seek contribution, indemnity or any other available remedy against any person other than EPA or the State found to be responsible or liable for contributions, indemnity or otherwise for any accounts which have been or will be expended by the Respondent in connection with the East Helena smelter site.

H. Nothing herein shall be construed to release the Respondent from any liability for failure of the Respondent to perform the RI/FS in accordance with this Consent Order, including Appendices A and C. The parties further expressly recognize that this Consent Order and the successful completion and approval of the RI/FS do not represent satisfaction, waiver, or release of any claim of the United States or the State against

the Respondent relating to the Facility, (including claims to require the Respondent to undertake further response actions and claims to seek reimbursement of response costs pursuant to section 107 of CERCLA) except that, upon receipt of written notice of satisfaction as provided in Article XXXI of this Consent Order, the Respondent shall have no further obligations under this Consent Order other than those described in Articles XII, XXI, XXIII and XXV.

I. Any claim of the Respondent against any other responsible party shall be subordinate to the rights of the United States and the State in accordance with section 113(f)(3)(C).

J. With the exception of claims for costs reimbursed by the Respondent to the State pursuant to Article XXIV of this Consent Order, the Respondent waives any claim or defense and is estopped from asserting that the role which the State assumes under this Consent Order constitutes any element of or the defense of estoppel in any action by the State asserting any and all common law and Federal and State statutory claims that have arisen or may arise against the Respondent, including any and all claims relating to the East Helena smelter site, for any and all available legal and equitable relief. If any such claim is brought by the State, the administrative record established pursuant to Article XXVI shall be available as provided in Article XVI to the State and the Respondent during the pendency of the claim. However, the State does not reserve any estoppel

rights under common law or Federal or State statutes concerning the performance of any element of work for which the State failed to provide comments to Respondent or to which the State assented after commenting upon pursuant to this Consent Order.

K. Nothing herein is intended to be a release or settlement of any claim for personal injury or property damage by any person not a party to this Consent Order.

L. This Consent Order is not to be construed, and will not be construed, to any extent or for any purposes, however and whenever arising, as an admission of liability or violation of any private contract or instrument or of any local, State, or Federal ordinance, rule, regulation, or statute, directly or indirectly, on the part of Respondent. Nor shall this Consent Order be admitted into evidence or used in any way, directly or indirectly, in any judicial or administrative proceeding or in any other manner against Respondent for any purpose other than in further proceeding by the parties hereto to enforce the terms of this Consent Order or by the signatories as evidence of the terms of this Consent Order in an action brought between the signatories; provided, however, nothing herein shall preclude Respondent from using the Consent Order or the fact of its entry in a proceeding against any third party, for contribution or the recovery of costs expended in complying with or implementing the work provided for in this Consent Order.



XXIV. REIMBURSEMENT OF COSTS

A. After the end of each fiscal year beginning from the effective date of this Consent Order, EPA shall submit an accounting, consisting of a SPUR report (Software Package for Unique Reports), or its equivalent, and a summary of any costs not included in the SPUR; to the Respondent of oversight costs. Oversight costs incurred by EPA, include and are not limited to Department of Justice costs, if any; direct and indirect costs, and contractor costs, to oversee the conduct of this RI/FS pursuant to section 104(a) of CERCLA. Within forty-five (45) working days of receipt of each such accounting, the Respondent shall remit a check to EPA for the full amount of such oversight costs. In the event that the Respondent disagrees with the assessment for oversight costs, the dispute shall be subject to the dispute resolution provisions in Article XIX of this Consent Order. If EPA prevails in dispute for any contested costs, Respondent shall pay said amounts in full.

Respondent does not waive the right to contest the assessment or payment for oversight costs in a future cost recovery action. Should EPA have to bring an action against Respondent pursuant to section 107 of CERCLA, to recoup any oversight costs as set forth in the accounting, not reimbursed by Respondent, including interest or treble damages as permitted by statute, or to obtain penalties pursuant to section 109 of CERCLA, EPA reserves its rights to recover any other past and future response costs under section 107 of CERCLA, incurred by

EPA in connection with response activities conducted pursuant to CERCLA in connection with the East Helena smelter site.

B. Payment to EPA for oversight costs incurred by EPA shall be made to the order of the Hazardous Substance Response Trust Fund forwarded to:

EPA Region VIII  
Superfund Accounting  
P.O. Box 360859M  
Pittsburgh, Pennsylvania 15251  
Attn: Superfund Collection Office

Copies of all payments to EPA shall be provided at the time of such payments to the EPA Project Coordinator and to:

EPA Region VIII  
Attn: Sandra R. Moreno, Esq.  
Office of Regional Counsel  
999 18th Street, Suite 500  
Denver, Colorado 80202

C. EPA reserves the right to bring an action against the Respondent for recovery of any past and future costs incurred by the United States in connection with any response activities conducted or to be conducted at the Facility, other than those response activities completed pursuant to this Consent Order to the satisfaction and approval of EPA.

D. State of Montana

1. The Respondent agrees to and shall reimburse the State for all response costs incurred by the State up to and including \$130,000.00 that were not paid with Federal or Fund monies at or in connection with the East Helena smelter site prior to this

Consent Order, including all costs incurred under, arising from, or in connection with, this Consent Order. The Respondent retains the right to pursue claims against persons other than the State for contribution or indemnity for these costs.

2. On or before the beginning of each calendar quarter (i.e., before January 1, April 1, July 1, and October 1), beginning April 1, 1989, after the effective date of this Consent Order, the State shall submit an accounting, including all applicable documentation, to the Respondent covering all claimed response costs incurred by the State at, in connection with, or arising out of the East Helena smelter site for that quarter period. Within thirty (30) working days of receipt of documentation from the State, the Respondent shall, subject to its right to invoke the provisions of subparagraph 4 of this paragraph, reimburse the State for all such costs.
3. Payment to the State for its response costs described in subparagraphs 1 and 2 shall be by certified or cashiers check, made payable to "State of Montana, Department of Health and Environmental Sciences" and shall be tendered to: Centralized Services Division, Montana Department

of Health and Environmental Sciences,  
Cogswell Building, 1400 Broadway, Room C123,  
Helena, Montana 59620. Payments should be  
identified as "Response Costs -- East Helena  
Smelter Site." Copies of all payments to the  
State shall be provided at the time of such  
payment to:

Thomas L. Eggert, Esq., Legal Division,  
Montana Department of Health and  
Environmental Sciences, Cogswell Building,  
1400 Broadway, Room C126, Helena, Montana 59620.

4. If the Respondent concludes that the State has made an accounting error or has included response costs that are not recoverable under CERCLA section 107 or sections 75-5-635 or 75-10-715, MCA, or under other State statutory or common law, or has improperly included a response cost included in the EPA accounting, Respondent may contest payment by notifying the State of these conclusions in writing within thirty (30) working days of receipt of the accounting or within forty-five (45) working days of receipt of EPA's fiscal year accounting. After such notice has been given, the State and the Respondent shall have thirty (30) working days to resolve their differences. If agreement cannot be reached

within the 30-day period, the State reserves all rights it has to bring an action against the Respondent pursuant to applicable Federal or State statutory or common law to recoup all recoverable costs as set forth in the accounting not reimbursed by the Respondent. In all cases except where the Respondent is found to have acted reasonably in contesting the payment of the State's response costs submitted pursuant to subparagraph 2 of this paragraph, and such costs are subsequently found to be due and owing to the State pursuant to applicable Federal or State law, the Respondent shall be liable for punitive damages in an amount of two (2) times the enforcement and litigation costs, including attorneys and expert witness fees and expenses, incurred by the State in collecting such contested amount. Any objection to the State's response costs not made within forty-five (45) working days of receipt of EPA's concurrent fiscal year accounting is deemed waived by the Respondent.

5. For purposes of subparagraphs 1 through 4, inclusive, of this section XXIV.D., the term "response cost" shall include all costs of all activities included within the definitions of the terms "removal," "remedial action," and "response"

in CERCLA sections 101(23), (24), and (25), respectively. The term also includes the cost of all activities which fall within the definition of "remedial action" set forth in section 75-10-701(5), MCA, and all costs recoverable pursuant to section 75-5-635, MCA, and applicable State common law.

E. The State agrees not to independently retain contractors, subcontractors, or consultants using CERCLA monies to oversee the same activities of the Respondent conducted pursuant to this Consent Order, resulting in duplication of effort.

XXV. INDEMNIFICATION OF THE UNITED STATES AND THE STATE

A. The Respondent agrees to indemnify and save and hold the United States Government and the State, their agencies, departments, agents, and employees, harmless from any and all claims or causes of action arising from, or on account of, acts or omissions of the Respondent, its officers, employees, receivers, trustees, agents, or assigns, in carrying out the activities pursuant to this Consent Order.

B. Neither EPA nor the State is party to any contract entered into by the Respondent at the site.

XXVI. ADMINISTRATIVE RECORD

EPA shall prepare the administrative record supporting the RI/FS work required under this Consent Order and any

subsequent remedial decisions, and the Respondent agrees to cooperate with EPA in the preparation of the administrative record. The administrative record shall include, but not be limited to, all documents and data submitted by the Respondent pursuant to this Consent Order and all correspondence between EPA and the Respondent relating to implementation of this Consent Order, including documents referenced in Article XXIX. The administrative record shall also include, but not be limited to, all correspondence between EPA and the State as provided under CERCLA, the NCP, and applicable EPA guidance. Notwithstanding the preceding sentence, EPA and the State reserve the right to protect from disclosure to the Respondent and the public any documents and communications protected from disclosure under applicable State and Federal law. The Respondent shall submit to EPA copies of all supporting documentation (such as QA/QC and chain of custody records, as well as scientific treatises or references which are not easily available to the general public) with each draft and final deliverable document required under this Consent Order and Work Plans for inclusion in the administrative record as appropriate.

XXVII. PUBLIC COMMENT AND EFFECTIVE DATE  
OF ADMINISTRATIVE ORDER

Within fifteen (15) calendar days of the date of the execution of this Consent Order, EPA shall announce the availability of this Consent Order to the public for review and comment. EPA shall accept comments from the public for thirty

(30) calendar days after such announcement. At the end of the comment period, EPA and the State shall review all such comments and EPA, after consultation with the State, shall either:

- a) determine that the Consent Order should be made effective in its present form, in which case the EPA Project Coordinator shall so notify the Respondent's Project Coordinator in writing, and the Consent Order shall become effective on the date the Respondent's Project Coordinator receives such notification;  
or
- b) determine that modification of the Consent Order is necessary, in which case the EPA Project Coordinator will inform the Respondent's Project Coordinator as to the nature of all proposed changes. A thirty (30) calendar day negotiation period may be initiated by the Respondent. If the Respondent agrees to the modifications, the Consent Order shall be so modified and shall become effective upon signature of EPA and the Respondent.

In the event that the Respondent does not agree to modifications proposed by EPA as a result of public comment, EPA, after consultation with the State, may withdraw this Consent Order. In such an event, EPA and the State reserve all rights to take such actions as they deem necessary.



XXVIII. SUBSEQUENT AMENDMENT

In addition to the procedures set forth in Articles X, XII, XIII, XVII, XVIII, and XIX of this Consent Order, this Consent Order may be amended by mutual agreement of EPA, after consultation with the State, and the Respondent. Any amendment of this Consent Order shall be in writing, signed by EPA, the State, and the Respondent, and shall have as the effective date that date on which such amendment is signed by EPA.

XXIX. CONSISTENCY WITH NCP

EPA agrees that all work performed by the Respondent pursuant to this Consent Order, if performed in accordance herein, is not inconsistent with the National Contingency Plan. Upon termination of this Consent Order, pursuant to Article XXXI, EPA agrees to provide a written statement to the Respondent stating that the costs incurred in complying with this Order are not inconsistent with the National Contingency Plan for purposes of any subsequent administrative or judicial proceeding. This written statement shall become part of the Administrative Record.

XXX. COVENANT NOT TO SUE

For and in consideration of the payments being made by the Respondent under Article XXIV and performance of the activities conducted pursuant to this Consent Order, upon termination of this Consent Order pursuant to Article XXXI, and after reimbursement to EPA and the State as provided in Article XXIV, EPA and the State covenant not to sue the

Respondent for the work required and authorized under the terms of this Consent Order. This covenant not to sue shall not be construed to limit EPA's or the State's right to sue or to take any administrative action against PRP's who do not sign this Consent Order. Nothing herein shall be deemed to grant any rights to persons not parties to this Consent Order, and EPA and the State reserve all rights against such persons, entities, or PRP's.

#### XXXI. TERMINATION AND SATISFACTION

The provisions of this Consent Order shall be deemed satisfied, except for any record access, record retention, reservation of rights, and indemnification clauses herein, upon receipt by the Respondent of written notice from EPA that the Respondent has demonstrated that all of the terms of this Consent Order, including any additional work, modifications or amendments, have been completed in accordance with the terms thereof to the satisfaction of EPA, after consultation with the State. Upon such demonstration by the Respondent, said written notice shall not be unreasonably withheld or delayed.

#### XXXII. RELATIONSHIP OF THE PARTIES

A. The State, in its consultative capacity, shall first submit to EPA all comments regarding any and all data, work plans, reports, or other documents related to the requirements of this Consent Order. EPA, in consultation with the State, shall consider these comments prior to issuing Final Comments

("Final Comments") to Respondent. Final Comments shall incorporate EPA's comments, as well as those submitted by the State and accepted by EPA.

B. To the extent EPA does not incorporate the State comments into EPA Final Comments, the State must submit those unaddressed comments directly to Respondent and EPA ("State Comments"). The State must communicate all outstanding or unaddressed comments to Respondent within twenty (20) working days after EPA's Final Comments have been released. If the State does not submit State comments to Respondent within the time provided, the State may not later seek to compel Respondent to undertake additional activities for those elements of work undertaken pursuant to this Consent Order for which the State failed to provide comments to Respondent or which the State assented to after commenting upon. The State does not waive any rights to compel Respondent to undertake investigations on issues not addressed by this Consent Order or on environmental problems based on new data or changed conditions discovered after comments were due on a particular element of work.

C. Respondent shall communicate directly with EPA regarding the Final Comments. Respondent may either incorporate State Comments into the work to be performed pursuant to this Consent Order or provide written rationale why such work will not be performed. The State reserves all of its rights as to any of the State Comments not incorporated into the work by Respondent.

IT IS SO AGREED:

ASARCO Incorporated

BY: *R.M. Novotny*  
R.M. Novotny  
Executive Vice President *Buad*

12-22-88  
Date

IT IS SO AGREED:

State of Montana  
By Montana Department of Health and Environmental Sciences

BY: *John J. Drynan*  
John J. Drynan, Director

12/28/88  
Date

IT IS SO ORDERED AND AGREED:

United States Environmental Protection Agency

BY: *James J. Scherer*  
James J. Scherer  
Regional Administrator

12/30/88  
Date

EFFECTIVE DATE: \_\_\_\_\_

Ref: 8RC

APPENDIX A: COMPREHENSIVE REMEDIAL INVESTIGATION\FEASIBILITY  
STUDY PLAN AND EPA-APPROVED REVISIONS AND ADDENDA

Part I Comprehensive Remedial Investigation\Feasibility  
Study Plan (An RI\FS Work Plan submitted for ASARCO, Inc.,  
by Hydrometrics, Inc., Consulting Scientists and Engineers,  
Helena, Montana, September 1987); and

Part II EPA's and State's final comments and ASARCO's  
revisions and addenda as approved by EPA:

1. A letter to Jon C. Nickel from D. Scott Brown,  
together with 22 separate comments, dated October 29,  
1987; and
2. A letter to Scott Brown from Jon C. Nickel,  
together with the errata document and six field  
documents, dated November 19, 1987.

Footnote: The schedules contained within the Comprehensive  
Remedial Investigation\Feasibility Study Plan (September 1987),  
for conducting the Phase II RI\FS activities at the East Helena  
smelter site, and any subsequent proposed schedule prior to the  
execution date of this Consent Order, are hereby superseded by  
Appendix C: Schedule for Required Reports and Tabulations of  
Validated Data.

REF: BMD

KC

October 29, 1987

Mr. Jon C. Mickel  
Industrial Quality Manager  
ASARCO, Inc.  
P.O. Box 6  
East Helena, MT 59635

Dear Jon:

This letter will constitute conditional acceptance by the EPA of the document entitled "Comprehensive Remedial Investigation/Feasibility Study Plan," as revised and submitted to me on September 25, 1987.

In keeping with statements that I made at the meeting of ASARCO, State of Montana, and EPA officials on October 1, and again on October 19 at our meeting concerning outstanding technical issues, I want to reiterate that with very few exceptions the document is thorough. It follows the requirements set forth for an RI/FS work plan and we are confident that it will provide a sound basis for identifying reasonable and effective remedial measures for this site.

The few exceptions, which you and I have already discussed conceptually, will have to be rectified in order for the EPA to accept the document without condition and authorize its inclusion in the Administrative Order currently being negotiated. That should be neither a difficult task nor one that overshadows the fact that the preparation of this work plan was a job well done.

Both the State of Montana and EPA have reviewed this final draft. Our comments fall into two general categories.

First, there are a few items still lacking or in error in the main body of the study plan. We recommend that you should correct these omissions and errors in the form of an errata sheet. While certain comments of this nature are more substantive than others, e.g., Comment Nos. 15 and 17 are far more substantive than is Comment No. 10, an errata sheet will nevertheless allow you to document that necessary adjustments have been made.

Scott Brown  
BMD 10/29/87

BMD  
JFK  
10/29/87

-2-

Our second category of comments call attention to the need for additional information and clarification in respect to the field documents (Appendices 1, 2 and 3). We are particularly interested in conveying those comments to you and reviewing amendments to those field documents before an attempt is made to sample the Wilson Ditch sediments, backhoe pits, off-site soils, or fish tissue. In addition, we note that the Standard Operating Procedures for sampling soils on the plant site are missing in this final draft and we ask that you amend accordingly before any further soil sampling occurs there.

Finally, the uncertainty regarding the RI/FS schedule remains unresolved. Since that issue is more closely aligned with our discussions concerning the Administrative Order, I will look forward to meeting with you early during the week of November 2-5 in order to revise the schedule and develop a list of deliverables.

Please do not hesitate to contact me if you wish to discuss our comments.

Sincerely,

SB-

D. Scott Brown  
Remedial Project Manager

Enclosure: Comments on RI/FS Plan

cc: Eric Finke, G40  
Sandra Moreno, 3RC  
David Bunte, CH2M Hill  
Doug Rogness, MDHES

Scott:ct:10/28/87:4493

## COMMENTS ON ASARCO'S COMPREHENSIVE RI/FS

## WORK PLAN - THIRD DRAFT

1. Page 2-12. An "\*" should be added to anions and field parameters for the special analysis list.
2. Page 3-10. The actual bentonite to be used to plug the ASARCO well should be analyzed.
3. Page 3-17. The statement that "no arsenic has been observed from samples of private wells" is not correct. The Hulst wells and the St. Clair well have shown elevated arsenic concentrations.
4. Page 3-21. The most recent analysis of EH-50 showed that 0.0225 mg As/L were contained in this well. This is inconsistent with the text.
5. Page 4-10. Since many of the existing soil core samples were analyzed for only a portion of the enriched elements, it is recommended that the majority of the planned soil core and backhoe pit samples be analyzed for the full set of enriched elements.
6. Page 4-10. EPA, 1986 is cited in the text but there is no such citation in the references.
7. Page 4-10. The soil sampling sites in section 4.1.2 do not coordinate with planned or existing drill holes as is indicated in the text.
8. Page 4-15. It is suggested that surface soil samples will be taken in parks and playgrounds if none were collected in the 1983 CDC study. Are these in addition to the 20 samples already planned?
9. Page 4-25. For the Wilson Ditch sampling, the increments to be sampled in the 0 to 30 inch interval, the sampling methods and QA procedures need to be specified. Also the full list of enriched elements should be analyzed for most of the samples taken. QAPP and FOP addenda are needed for the Wilson Ditch field work.  
  
The sampling sites should be labeled 'WD' rather than 'DH.'
10. Page 4-26. The Wilson Ditch Numbering System is not consistent with previous work.
11. Page 4-44. The location of cattle herds in the Helena Valley may have changed since 1985. This information should be confirmed.



12. Page 4-56. If fish samples cannot be shipped immediately after collection, they should be frozen prior to shipment.
13. Page 4-56. The blind field standards for the fish sampling should be identified in the QAPP addendum. All QA procedures should be described in the QAPP.
14. Page 6-5. The list of parameters to be analyzed in the soil core samples should be as discussed in comment 5.
15. Page 8-2. Prickly Pear Creek has shown increased arsenic and other metals concentration as it passes the smelter. Regardless of the sources of these increased contaminant levels, surface water must be considered in the EA.
16. Page 9-2. Treatability testing should be started prior to the FS if it is likely that this data will be needed in the FS.
17. Page 10-1. The endangerment assessment report should be described in this section.
18. Page 12-1. The errors identified in the references in the previous set of comments were not corrected.
19. FOP - Decontamination of Sampling Equipment - The description of decontamination procedure for the backhoe is unclear. Does the first paragraph include organic and inorganic decontamination procedures?
20. There is no QAPP addenda for the backhoe pits. What are the procedures for including duplicate cross contamination blanks and blind field standards. The numbers of natural and QA samples need to be identified. A QAPP addendum similar to what was developed for the soils, vegetation and livestock investigation should be developed.
21. There is no SOP for the fish sampling.
22. There is no SOP for the on-site or East Helena surface soil sampling.

**ASARCO**

EAST HELENA PLANT

November 19, 1987

Mr. Scott Brown  
Remedial Project Manager  
U.S. Environmental Protection Agency  
Federal Building - Drawer 10096  
301 South Park  
Helena, Montana 59626

RE: ASARCO, Inc. - East Helena

Dear Scott,

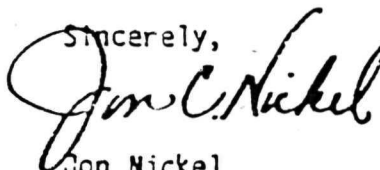
Attached please find the ASARCO East Helena response/errata documents which reflect modifications to the Comprehensive RI/FS Work Plan dated September, 1987. These documents contain responses to both the comments recently received by ASARCO from Lester D. Sprenger, EPA Field Quality Assurance Officer, dated September 9, 1987 and those set of EPA comments dated October 29, 1987.

The responses have been formulated into an errata document which should be incorporated as an attachment to the Work Plan. Additional materials that accompany this document that relate to specific comments include:

1. SOP(s) for onsite and East Helena surface soils sampling
2. SOP for fish sampling
3. FOP for soil core sampling in Wilson Ditch
4. QAPP for bottom sediment sampling in Wilson Ditch
5. QAPP for soil sampling from backhoe test pits
6. QAPP(s) for sampling and preservation of organic parameters.

We anticipate that these responses will satisfy your concerns over remaining technical issues and look forward to EPA's unconditional acceptance of the Work Plan.

Sincerely,



Jon Nickel  
Industrial Quality Manager

JN:ls  
Enclosures

c: D. Rogness - Solid Hazardous Waste Bureau  
D. Bunte - CH2M Hill - Helena

ASARCO, INC.  
EAST HELENA, MONTANA

COMPREHENSIVE RI/FS WORK PLAN RESPONSES AND ERRATA SHEET  
ADDRESSING EPA COMMENTS DATED OCTOBER 29, 1987

November 19, 1987

Comment  
No.

Response

1. Comment noted. An "\*" should be added to anions and field parameters for the special analysis list.
2. A sample of the actual bentonite to be used to plug the ASARCO well will be sent to the ASARCO Salt Lake City, Utah, laboratory for analysis of metals content.
3. At the time of the writing of the Work Plan, the statement was correct. No arsenic had been observed in private wells in East Helena, which is the subject on page 3-17. The Hulst wells are not in the city limits of East Helena and are not downgradient from the ASARCO smelter. However, as the comment states, groundwater samples from Hulst wells have shown elevated arsenic concentrations. The data from the St. Clair well is recent data and post-dated the writing of the statement.
4. Recent analysis of EH-50 was not available at the time of writing. Also, it should be noted that the analysis reference was not collected by usual methods as part of the scheduled sampling program. The sample was collected as a check sample during aquifer test pumping.
5. A soil core and backhoe pit sample analytical program will be developed jointly by EPA and ASARCO. The program will include selection of samples for the full set of elements. We are hopeful that these samples will be analyzed by the EPA contract laboratory.
6. The reference on page 4-10 should read "(U.S. EPA, 1987)".
7. Soil sample site locations shown on Figure 4-2 are preliminary and were adjusted after examination of site suitability in the field. Scheduled soil drill hole locations and scheduled surface soil programs will be coordinated as stated in the text.
8. A total of 24 surface soil sites will be sampled including four sites located in parks and playgrounds.

Comment  
No.

Response

9. The Wilson Ditch sample increments will be the same as those of the Soils RI Phase I (EPA, 1987); 0-4 inches, 4-8 inches, 8-15 inches and 15-30 inches. Soil samples will be collected using a small diameter hand soil core auger, if possible. A soil core SOP addendum accompanies this response/errata document. However, field examination shows rocks and cobbles are common in the ditch and soil cores may not be possible. If cobbles prohibit soil core drilling, samples will be collected from a test pit excavation as described in Section 4.1.1. A QAPP Addendum for sample collection of Wilson Ditch bottom sediments accompanies this response/errata document. A program developed jointly by ASARCO and EPA will include select samples to be analyzed by the full set of elements (see response No. 5). The sample sites listed on page 4-25, paragraph 3, first sentence, should be labelled "WD" rather than "DH".
10. Site labels WD-3 and WD-4 shown on Figure 4-4 should be reversed.
11. The location of Helena Valley cattle herds have been confirmed through a site reconnaissance of the Helena Valley.
12. Fish samples will be frozen prior to shipment.
13. A U.S. EPA Trace Metals In Fish Standard will be used for blind field standards. Standard frequency will be 1/20 of natural samples collected. A total of two standards will be submitted.
14. The parameter list will be as discussed in Comment No. 5.
15. Comment understood. The EA will consider surface water.
16. As described in the interim guidelines for feasibility studies under the provisions of SARA, the FS and RI are interactive processes. An initial screening of potential remedial actions is to be performed early as a part of this process and a preliminary FS report is to be submitted. It is logical that treatability testing should be performed after this initial preliminary screening so that appropriate treatability testing procedures can be developed. Application of treatability tests would therefore be more efficient and focus on promising remedial action alternatives.

NOV 23 1987

Comment  
No.

MONTANA OFFICE  
Response

17. As agreed upon by ASARCO and EPA, an Endangerment Assessment report will be added to the reports listed on page 10-1. The endangerment assessment report will address each major unit.  
  
In addition, the Comprehensive Remedial Investigation report and the Comprehensive Feasibility Study report will be combined as agreed upon by ASARCO and EPA. Therefore, the sequence of reports listed on page 10-1 is amended as follows:
  1. Remedial Investigation Health and Safety Plan
  2. Status reports
  3. Preliminary Remedial Action Alternative report
  4. Process Pond RI/FS report
  5. Comprehensive Endangerment Assessment report
  6. Comprehensive Remedial Investigation/Feasibility Study report
18. The final draft of the EPA Soil, Vegetation and Livestock RI report should be dated August 1986, not 1987. The final RI report for the EPA study should be dated May 1987, not July.
19. Paragraph 2 under Decontamination - Backhoe is out of place. The paragraph should follow the paragraph under Soil Coring Devices on the previous page. It was intended this paragraph refer to sampling devices including bailers, soil piston samplers and soil coring devices. The paragraph is not applicable to backhoe or drill rig decontamination.
20. A QAPP addendum for backhoe test pits is attached.
21. The fish sampling procedure is described in the Work Plan text on pages 4-56 and 4-57. As described on page 4-56, the field procedure parallels the EPA SOP A-4 (EPA, July 1986) and is essentially the same. All information required by the SOP request is already in the text. However, a redundant SOP for fish sampling accompanies this document as an addendum to the work plan.
22. SOP for Onsite and East Helena surface soil sampling are included as addendums, and accompanying this Response/Errata sheet.

RESPONSES AND ERRATA ADDRESSING COMMENTS  
IN THE MEMORANDUM FROM LESTER D. SPRENGER TO SCOTT BROWN  
RECEIVED BY ASARCO, INC. ON NOVEMBER 6, 1987

Comment  
No.

Response

1. The sampling and preservation procedures described in Appendix 1-F FOP are applicable to water samples and follow EPA, 40 CFR 136.3 (7/1/85 ed.). Guidelines establishing test procedures for analysis of pollutants are referenced in the Work Plan. An addendum to Appendix 1-F for collection and preservation of base/neutrals and acids is attached.  
  
Also enclosed is an addendum for sampling and preservation of soil samples to be analyzed for organic parameters. Although soil sampling for organic analysis is not scheduled as part of the Comprehensive RI/FS work, these procedures would be applicable if soil samples should be collected. Procedures are taken from Test Methods for Evaluating Solid Waste, (U.S. EPA SW 846, 1985).
2. A cross-contamination blank consists of a kimwipe of decontaminated sampling instruments or equipment and will assess the possibility of cross-contamination from equipment. A kimwipe bottle blank consists of a kimwipe of an unused bottle and is intended to assess the possibility of container or kimwipe contamination.
3. As described in Item 19, decontamination procedures using acetone is intended for small sampling devices. Only small amounts of acetone are used and disposal is not a problem as the acetone used evaporates in a short time. Ground disposal does not occur.
4. A fish sampling SOP accompanies this article as an addendum. It has been modified to address the comments on fish size, preservation and sample number.

# MDI

## ASARCO EAST HELENA RESIDENTIAL SOIL SAMPLING

### STANDARD OPERATING PROCEDURE

#### A. For selecting soil sample locations

1. If sample is a front and back yard composite, start in the front yard. Estimate the approximate center of the yard when facing the house, move one and one-half meters from the curb (or the street edge) toward the house. Place the  $0.7m^2$  rectangle here. If it is not possible to take a sample at the center of the yard, while facing the home, move one meter to the right of the obstruction and proceed. If there is an obstruction one meter from the street edge, move an additional one meter towards the house.
2. For the back yard, repeat the above steps except use the alley instead of the street. The front and back yards constitute one sample. If there is no backyard, then the soil sample should be obtained in whatever open space is available, but at least six meters from painted surfaces.
3. If sampling a playground or park, draw an imaginary line to the opposite diagonal corner of the playground or lot. Along this line every ten meters take samples in the same manner as prescribed in the soil collection description. Follow the same procedures for the other two corners, making sure to take a sample in the center where the lines intersect.
4. If sampling a side yard, estimate the approximate center of the side of the house. Place the  $0.7m^2$  rectangle 1/2 meter from the foundation of the house.

#### B. For collecting soil samples

1. Place the  $0.7m^2$  rectangle on the sample area.
2. Insert acid washed acetate liner in soil probe. Acid wash of liners and caps is as follows:
  - a) tap water rinse
  - b) dilute (10%) HCL rinse
  - c) distilled water rinse
  - d) air dry



MDI

3. Insert soil probe (approximately 2 inches), consecutively, in the four corners of the rectangle.
4. When collecting a front and back yard composite sample, you may have to insert a second liner in the probe to accomodate the back yard sample.
5. Sampling the four corners in a side yard will not provide enough sample material. Hence, immediately adjacent to each sample hole at the four corners, a second hole will be punched.
6. Remove acetate liner and cap both ends. Store the acetate liner upright.
7. Decontaminate the equipment by placing the zero contamination tube in a tap water bath and cleaning with a test tube brush. Rinse with distilled water. Dry outside with paper towels.
10. Duplicates. After obtaining cores, rotate the  $0.7m^2$  rectangle  $90^\circ$  and extract duplicate cores. In the lab, these duplicate cores will be composited with the originals and split. Duplicates will be taken at sites chosen by random number generation.
11. Cross-contamination blanks. These will consist of two types. One type will be a kimwipe check of the zero contamination tube. The second type will be a kimwipe check of the acetate liner.
12. In the lab, remove soil cores from each acetate liner with the plunger.
13. Dissect the grass and dense root layer with a disposable plastic knife. This layer should be removed immediately where the dense roots end (approximately 0.5 to 1.5 inches). The 0 to 1 inch sample will then be collected from below where the grass and dense roots were removed. Included in the sample train will be three additional samples which are made of the soil material removed from the dense root zone.
14. Archive the grass and dense root layer and discard the soil below the 0 to 1 inch sample.
15. Package and ship samples according to SOP for packaging and shipping.



## ASARCO PLANT AREA

## STANDARD OPERATING PROCEDURE

1. At the site, record a site description (see site description form) including general relief, aspect, estimated percent slope, relative slope position, vegetation description and percent cover, parent material, irrigation, stoniness, and any other pertinent comments.
2. At the site, mark the center of the site with a wooden stake.
3. Collect soil samples at three locations approximately 20 meters due north, south and west of the staked location. The east location will serve as an alternate.
4. The soil samples will be collected with a stainless steel trowel from the 0-1" depth for the ASARCO Plant Area study. The sampling crew will wear clean disposable surgical gloves at each site.
5. Deposit the three soil samples on a clean 6-mil plastic sheet.
6. Remove gross coarse fragments and roots, and break up the soil.
7. Pull up each corner of the plastic sheet toward the diagonally opposite corner. This process is done from each corner. After the soil is mixed, quarter the pile. Put small samples from each quarter into the 3-oz. jar until it is full.
8. Decontaminate the equipment according to Decon SOP.
9. Package and ship samples according to SOP for packaging and shipping.

## SOP FISH SAMPLING

MDFWP Personnel and Assistants  
Responsibility with DCO Direction

1. Fish will be captured through electroshocking. Personnel of the Montana Department of Fish, Wildlife and Parks will shock fish in shallow water at the collection area. The safe operation of all electroshocking equipment is the responsibility of MDFWP personnel.
2. Using dip nets, MDFWP personnel will collect all anesthetized fish and place them directly into a large, well aerated holding tank. To reduce fish mortality, sample fish will be selected immediately and all other fish will be returned to the water.
3. Five fish of each species sampled (see pages 4-52 and 4-55) will be selected from each of the collection areas (see Figures 4-7 and 4-8). Older and larger fish exceeding 150 mm will be selected, if possible. Fish will always be handled with surgeon's gloves.
4. Each fish will be weighed to the nearest gram (gm) and measured for maximum total length to the nearest millimeter (mm).
5. The five fish of each species (1 fish per sample unit) will be placed in a large zip-lock polybag.
6. Also placed in this large polybag will be a small zip-lock polybag containing the properly completed EPA sample tag.

7. Each sample will be sealed with a completed custody seal and placed into a large cooler containing a layer of vermiculite in the bottom.
8. Blue ice will be used to keep samples cool.
9. Blind field standards obtained from EPA will be added to coolers using comparable packaging, sample tags and sample seals.
10. Before shipping, fish will be frozen solid in a large freezer. The freezer used will be sealed using chain-of-custody seals to ensure security is maintained.
11. Frozen samples will be shipped to the ASARCO Salt Lake City laboratory for analysis. Standard packaging, labeling and shipping procedures will then be followed as described in the Fish Sampling QAPP.

## HYDROMETRICS

HELENA, MONTANA

FIELD OPERATING PROCEDURE  
SOIL SAMPLE COLLECTION USING A HAND OPERATED SOIL CORE AUGER  
(HFOP-10-11/87)

## I. Equipment

- Soil core auger
- Containers - 8 ounce I-Chem glass bottle with teflon lid
- Disposable clear plastic sheeting

## II. Sample Procedure

1. Follow appropriate decontamination procedures as per the ASARCO East Helena QAPP prior to sample collection at each site.
2. Advance soil core by turning drive handle clockwise.
3. Extrude core using appropriate extruder devices. Place sampled soil on clean plastic sheeting for compositing.
4. Composite the samples in the following increments:

0 to 4 inches  
4 to 8 inches  
8 to 15 inches  
15 to 30 inches

Use new space or additional clean plastic sheet for sample composition between increments to avoid cross-contamination.

5. Decontaminate soil core and associated equipment between each sample increment.
6. Place each composite sample into the glass containers as the incremental samples are collected.
7. The composite sample is labelled and shipped in accordance with packaging and shipping procedures (HFOP-4-8/84).

ASARCO RI QAPP ADDENDUM  
BOTTOM SEDIMENT SAMPLING FROM WILSON DITCH

Bottom sediment will be collected at 4 samples sites to determine depth and extent of elevated metals concentration.

TABLE 1. SUMMARY OF ANALYTICAL PARAMETERS, FIELD MEASUREMENTS AND FIELD OBSERVATIONS FOR WILSON DITCH BOTTOM SEDIMENT SAMPLES

<u>Field Observations</u>	<u>Field Measurements</u>	<u>Analytical Parameters</u>	
		<u>Standard</u>	<u>Special</u>
Date, time, site designation, location	None	Ag, As, Cd, Pb, Zn, Cu	Cr, Hg, Sb, Sn, Se, Mn, Tl, As, Cd, Pb, Zn, Cu

Table 2 is a QA/QC sample schedule for the field activities. A total of 16 soil samples will be collected from Wilson Ditch sample sites. Cross-contamination blank consists of Kimwipes, with which the sampling tools will be wiped down after cleaning. The Standard Reference Material used will be NBS River sediments. A designated field triplicate will be provided to the laboratory, if required, for spiking of soils.

Laboratory internal QC standards will be set forth in the LAP to be provided by the analytical laboratory. At a minimum, the lab QC program will satisfy EPA CLP requirements. Soil samples will be stored in a sealed cooler. When sampling is complete, they will be shipped, along with chain-of-custody and sample analysis forms, to the ASARCO laboratory in Salt Lake City, Utah.

TABLE 2. QA/QC SAMPLE SCHEDULE FOR SOIL SAMPLING STUDY

<u>Medium</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Number</u>
Soil	Natural samples	- -	16
	Field duplicates	1/5	3-4
	Cross-contamination blanks	1/5	3-4
	Kimwipe (bottle) blanks	1/5	3-4
	Blind field standards	1/5	3-4 *
	Splits for EPA	unknown	unknown

\* Number of standards submitted may be limited by standard availability

ASARCO RI QAPP ADDENDUM  
SOIL SAMPLING FROM BACKHOE TEST PITS

The objective of test pit soil sampling is to augment the existing soil profile data base. Table 1 shows the parameters to be measured as part of this task.

TABLE 1. SUMMARY OF ANALYTICAL PARAMETERS, FIELD MEASUREMENTS AND FIELD OBSERVATIONS FOR SOIL SAMPLES FROM BACKHOE TEST PITS

<u>Field Observations</u>	<u>Field Measurements</u>	<u>Analytical Parameters</u>	
		<u>Standard</u>	<u>Special</u>
Date, time, site designation, location	None	Ag, As, Cd, Pb, Zn, Cu	Cr, Hg, Sb, Sn, Se, Mn, Tl, As, Cd, Pb, Zn, Cu

Table 2 is a QA/QC sample schedule for field activities. Soil samples will be collected from 10 sample sites. Cross-contamination blank consists of Kimwipes, with which the sampling tools will be wiped down after cleaning. The Standard Reference Material used will be NBS River sediments. A designated field triplicate will be provided to the laboratory, if required, for spiking of soils.

Laboratory internal QC standards will be set forth in the LAP to be provided by the analytical laboratory. At a minimum, the lab QC program will satisfy EPA CLP requirements. Soil samples will be stored in a sealed cooler. When sampling is complete, they will be shipped, along with chain-of-custody and sample analysis forms, to the ASARCO laboratory in Salt Lake City, Utah.

TABLE 2. QA/QC SAMPLE SCHEDULE FOR SOIL SAMPLES FROM BACKHOE TEST PITS

<u>Medium</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Number</u>
Soil	Natural samples	- -	-
	Field duplicates	1/5	8
	Cross-contamination blanks	1/5	8
	Kimwipe (bottle) blanks	1/5	8
	Blind field standards	1/5	8 *
	Splits for EPA	unknown	unknown

\* Number of standards submitted may be limited by standard availability

HYDROMETRICS

HELENA, MT

## FIELD OPERATING PROCEDURE

## SAMPLING AND PRESERVATION OF ORGANIC PARAMETERS

(HFOP-32-11/87)

## WATER AND WASTEWATER

Because organic analyses require sophisticated laboratory equipment, all samples shall be transported to an approved laboratory for analysis. Normally, sample containers shall be topped off to exclude air, packed in ice and shipped to the laboratory. Analysis of samples shall be initiated immediately upon arrival at the laboratory. Samples shall be contained in glass bottles with teflon-lined lids. Routine organics should be sampled and preserved as follows:

<u>Parameter</u>	<u>Volume Requirement (m/l)</u>	<u>Container</u>	<u>Preservative</u>	<u>Holding Time</u>
BOD	1000	Plastic or glass	Cool, 4°C	48 hrs.
COO	50	Plastic or glass	Cool, 4°C H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
Oil & Grease	1000	Glass	Cool, 4°C H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
Organic Carbon	25	Plastic or glass	Cool, 4°C H <sub>2</sub> SO <sub>4</sub> or HCl to pH <2	28 days
Phenol	500	Glass with teflon-lined lid	Cool, 4°C 0.008% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> *	7 days until extraction; 40 days after extraction
Chlorinated Hydrocarbons	1000	Glass with teflon-lined lid	Cool, 4°C	7 days until extraction; 40 days after extraction
Pesticides	1000	Glass with teflon-lined lid	Cool, 4°C	7 days until extraction; 40 days after extraction

HFOP-32-11/87, continued

<u>Parameter</u>	<u>Volume Requirement (m/l)</u>	<u>Container</u>	<u>Preservative</u>	<u>Holding Time</u>
Polynuclear Aromatic Hydrocarbons	1000	Glass with teflon-lined lid	Cool, 4°C	7 days until extraction; 40 days after extraction
Purgeable Hydrocarbons	1000	Glass with teflon-lined lid	Cool, 4°C 0.008% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> *, HCL to pH2	14 days
Base/Neutral and Acids	1000	Glass with teflon-lined lid	Cool, 4°C 0.008% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	7 days until extraction; 40 days after extraction

\* Used only in the presence of residual chlorine.

#### References:

EPA, 1985, 40 CFR 136.3 (7-1-85 Ed.)



HYDROMETRICS

HELENA, MT

FIELD OPERATING PROCEDURE  
 SAMPLING AND PRESERVATION OF ORGANIC PARAMETERS  
 (HFOP-34-11/87)  
 SOLID WASTE

Because organic analyses require sophisticated laboratory equipment, all samples shall be transported to an approved laboratory for analysis. Normally, sample containers shall be topped off to exclude air, packed in ice and shipped to the laboratory. Analysis of samples shall be initiated immediately upon arrival at the laboratory. Samples shall be contained in glass bottles with teflon-lined lids. Routine organics should be sampled and preserved as follows:

<u>Parameter</u>	<u>Volume Requirement (m/l)</u>	<u>Container</u>	<u>Preservative</u>	<u>Holding Time</u>
Halogenated Volatile Organics Method 8010	25 ml	Glass	Cool with ice $\text{Na}_2\text{S}_2\text{O}_3^*$	14 days (including analysis)
Nonhalogenated Volatile Organics Method 8015	25 ml	Glass	Iced $\text{Na}_2\text{S}_2\text{O}_3^*$	14 days (including analysis)
Aromatic Volatile Organic Method 8020	25 ml	Glass	Iced $\text{Na}_2\text{S}_2\text{O}_3^*$ HCl pH <2	14 days (including analysis)
Acrolein Acrylonitrile Acetonitrile Method 8030	25 ml	Glass	Iced $\text{Na}_2\text{S}_2\text{O}_3^*$	14 days (including analysis)
Phenols Method 8040	None Specified	Glass	Iced $\text{Na}_2\text{S}_2\text{O}_3^*$ $\text{H}_2\text{SO}_4$ pH <2	7 days until extraction; 30 days for analysis
Phthalate Esters Method 8060	None	Glass	Iced; adjust pH to 6-8 with NaOH or $\text{H}_2\text{SO}_4$	24 hours without preservatives until extraction; 7 days with preservatives

## HFOP-34-11/87, continued

<u>Parameter</u>	<u>Volume Requirement (m/l)</u>	<u>Container</u>	<u>Preservative</u>	<u>Holding Time</u>
Organochlorine Pesticides and PC3s Method 8080	None Specified	Glass with teflon lids	Iced; adjust pH to 6-8 with NaOH or H <sub>2</sub> SO <sub>4</sub>	24 hours without preservatives; 7 days until extraction with preservatives; 30 days for analysis
Nitroaromatic and cyclic ketones Method 8090	None Specified	Glass with teflon lids	Iced; adjust pH to 6-8 with NaOH or H <sub>2</sub> SO <sub>4</sub>	24 hours without preservatives; 7 days until extraction with preservatives; 30 days for analysis
Polynuclear Aromatic Hydrocarbons Method 8100	None Specified	Glass	Iced; adjust pH to 6-8 with NaOH or H <sub>2</sub> SO <sub>4</sub>	24 hours without preservatives; 7 days until extraction with preservatives; 30 days for analysis
Chlorinated Hydrocarbons Method 8120	None Specified	Glass	Iced; adjust pH to 6-8 with NaOH or H <sub>2</sub> SO <sub>4</sub>	24 hours without preservatives; 7 days until extraction with preservatives; 30 days for analysis
Organophosphorus Pesticides Method 8140	None Specified	Glass	Iced; adjust pH to 6-8 with NaOH or H <sub>2</sub> SO <sub>4</sub>	24 hours without preservatives; 7 days until extraction with preservatives; 30 days for analysis
Chlorinated Herbicides Method 8150	None Specified	Glass	Cool to 4°C	7 days until extraction; 30 days after extraction
GC/MS Method for Volatile Organics Method 8240	None Specified	Glass with teflon lined lids	Iced; protect from light	None specified Assume 24 hours without preservatives; 7 days until extraction with preservatives; 30 days for analysis

HFOP-34-11/87, continued

<u>Parameter</u>	<u>Volume Requirement (m/l)</u>	<u>Container</u>	<u>Preservative</u>	<u>Holding Time</u>
GC/MS Method for Semi-Volatile Organics Capillary Column Technique Method 8270	None Specified	Glass with teflon lids	Cool to 4°C	14 days until extraction; 40 days after extraction
Polynuclear Aromatic Hydrocarbons Method 8310	None Specified	Glass	Iced	24 hours without preservatives; 7 days until extraction with preservatives; 30 days for analysis

\* Used only in the presence of residual chlorine.

Reference: Test Methods for Evaluating Solid Waste SW-846, US EPA (1985)

Ref: 8MO

APPENDIX B (Part I): ON-GOING RI ACTIVITIES (Investigations initiated pursuant to the Administrative Order on Consent of August 31, 1984, Docket No. CERCLA VIII-84-006)

#### Ground Water Investigations

- ASARCO well assessment
- Collect plant-site monitoring well samples
- Collect off-plant-site monitoring well samples
- Collect off-plant-site private well samples
- Conduct seepage runs
- Define aquifer
- Define surface and ground water interrelationships
- Define nature and extent of ground water contamination

#### Surface Soils/Surface Water Investigations

- Collect and evaluate soil core data
- Determine surface water runoff potential and impacts
- Define surface and ground water interrelationships
- Define nature and extent of surface water contamination

#### Slag Pile Investigations

- Preliminary evaluation of air quality data
- Conduct slag basin tests
- Determine surface water runoff impacts
- Determine effects of slag piles on ground water

#### Investigations of Ore Storage and Handling Areas

- Preliminary evaluation of air quality data
- Determine surface water runoff impacts
- Determine effects of ore storage and handling areas on ground water

#### Investigations of Process Pond and Process Fluids

- Collect and evaluate process fluid data
- Determine process fluid input/output balance
- Establish evaporation station
- Map process fluids circuitry
- Determine capacity to contain storm runoff

Ref: 8MO

APPENDIX B (Part II): REMAINING RI/FS ACTIVITIES (Investigations initiated after SARA and all reports on RI/FS activities initiated either prior to or after SARA)

Ground Water Investigations

- Piezometer installation
- Soil core sample drilling
- Multiple well aquifer tests
- Organic contaminant evaluation
- Continued sampling of monitoring wells
- Continued sampling of private wells
- Sequential extraction of selected samples

Surface Soils/Surface Water Investigations

- Collection of surface soil samples
- Excavation and sampling of soil test pits
- Sample and evaluate sediments in Wilson Ditch
- Commercial and noncommercial crops investigations
- Livestock investigations
- Fish investigations
- Migratory waterfowl investigations
- Estimate sediment loadings and erosion potential along Prickly Pear Creek

Slag Pile Investigations

- Ground water apportionment assessment
- Conduct bottle roll tests
- Evaluate air quality data
- Evaluate water level and water quality data
- EP toxicity test review
- Sequential extraction of selected samples

Investigations of Ore Storage and Handling Areas

- Collect additional soil core samples
- Evaluate air quality data
- Evaluate water level and water quality data
- EP toxicity test review
- Sequential extraction of selected samples

## Investigations of Process Pond and Process Fluids

- Sample and evaluate sediments and underlying soils
- Sample process fluids
- Assess Leakage
- Construct Speiss pit monitoring well
- Sample sediments from sumps
- EP toxicity test review
- Sequential extraction of selected samples

## Reports

- Bimonthly progress reports
- Preliminary remedial action alternatives report
- Tabulation of validated process ponds and process fluids data
- Process pond and fluids endangerment assessment (draft and final)
- Process pond and fluids RI/FS report (draft and final)
- Tabulation of validated ground water data
- Tabulation of validated surface water quality data
- Tabulation of validated soils, vegetation, livestock and fish data
- Migratory waterfowl report (If sampling is necessary, tabulation of validated data)
- Tabulation of validated slag pile data
- Tabulation of validated ore storage data
- Tabulation of validated air quality data
- Tabulation of validated sequential extraction and EP toxicity text data
- Comprehensive endangerment assessment (draft and final)
- Comprehensive RI/FS report (draft and final)

Ref: 8MO

APPENDIX C: SCHEDULE FOR REQUIRED REPORTS AND TABULATIONS OF  
VALIDATED DATA (Validated field sampling data, bimonthly  
reports, draft and final endangerment assessment reports, and  
draft and final remedial investigation and feasibility study  
reports required pursuant to Section XVIII of this Consent Order)

- 1) Bimonthly Progress Reports, as specified by the Consent Order of August 31, 1984 (Docket No. CERCLA-VIII-84-006), and Section XVIII of this Consent Order.
- 2) Preliminary Remedial Action Alternatives Report, for all operable units. Submitted April 1, 1988.
- 3) Tabulation of Validated Process Pond and Process Fluids Sampling Data (excluding sequential extraction and EP toxicity test data). Submitted October 15, 1988.
- 4) Tabulation of Validated Ground Water Sampling Data (excluding sequential extraction and EP toxicity test data). Submitted October 15, 1988.
- 5) Tabulation of Validated Surface Water Quality Data. Submitted October 15, 1988.
- 6) Tabulation of Validated Slag Pile Sampling Data (excluding chemical mass balance source apportionment data). Submitted October 15, 1988.
- 7) Tabulation of Validated Ore Storage Sampling Data (excluding chemical mass balance source apportionment data). Submitted October 15, 1988.
- 8) Migratory Waterfowl Report. Submitted December 1, 1988.
- 9) Tabulation of Validated Soils, Vegetation, Livestock and Fish Sampling Data. Due January 15, 1989.
- 10) Tabulation of Validated Sequential Extraction and EP Toxicity Test Data for the Process Ponds, Process Fluids and Ground Water. Due January 15, 1989.
- 11) Process Ponds Endangerment Assessment Draft Report. Due January 15, 1989.

- 12) Process Ponds Remedial Investigation and Feasibility Study Draft Report. Due January 15, 1989.
- 13) Tabulation of Validated Air Quality Data and Chemical Mass Balance Source Apportionment Draft Report. Due March 15, 1989.
- 14) Comprehensive Endangerment Assessment Draft Report. Due July 1, 1989.
- 15) Comprehensive Remedial Investigation and Feasibility Study Draft Report. Due November 15, 1989.
- 16) Process Pond and Fluids Remedial Investigation and Feasibility Study Final Report (including Final Process Ponds Endangerment Assessment). Due 30 working days following submittal of EPA's final comments concerning the Process Ponds Remedial Investigation and Feasibility Study Draft Report.
- 17) Comprehensive Remedial Investigation and Feasibility Study Final Report (including Final Comprehensive Endangerment Assessment). Due 30 working days following submittal of EPA's final comments concerning the Comprehensive Remedial Investigation and Feasibility Study Draft Report.